

We claim:

- SAC*
1. A two component developer for use in electrographic printing comprising substantially spherical toner particles and substantially spherical magnetic carrier particles, the toner particles having a radius  $R_T$  and the carrier particles having a radius  $R_C$ , wherein  $R_C$  is between about  $1.5R_T$  and about  $10R_T$ .
  - 5 2. The developer of claim 1, wherein  $R_C$  is between about  $2R_T$  and about  $5R_T$ .
  3. A two-component developer for use in electrographic printing comprising substantially spherical toner particles and substantially spherical magnetic carrier particles, the carrier particles having a dielectric constant  $\epsilon_c$  of at least about 6, the toner particles having a radius  $R_T$  and the carrier particles having a radius  $R_C$ , wherein  $R_C$  is between about  $1.5R_T$  and about  $10R_T$ .
  - 10 4. The developer of claim 3, wherein  $R_C$  is between about  $2R_T$  and about  $5R_T$ .
  5. The developer of claim 3, wherein the carrier particles have a dielectric constant  $\epsilon_c$  greater than about 10.
  - 15 6. The developer of claim 5, wherein  $R_C$  is between about  $2R_T$  and about  $5R_T$ .
  7. The developer of claim 3, wherein the carrier particles have a dielectric constant  $\epsilon_c$  greater than about 100.
  - 20 8. The developer of claim 7, wherein  $R_C$  is between about  $2R_T$  to about  $5R_T$ .
  9. The developer of claim 3, wherein the carrier particles have a dielectric constant  $\epsilon_c$  greater than about 298.
  10. The developer of claim 9, wherein  $R_C$  is between about  $2R_T$  to about  $5R_T$ .
  11. A method for producing electrographic images comprising the steps of:
    - (a) providing an electrographic printer comprising an imaging member, a toning shell located adjacent the imaging member and defining an external electric field of image development therebetween, and a two-component developer, comprising substantially spherical toner particles and substantially spherical magnetic carrier particles, the toner particles having a radius  $R_T$  and the carrier particles having a radius  $R_C$ , wherein  $R_C$  is between about  $1.5R_T$  and about  $10R_T$ ; and
    - 25 (b) causing developer to move through the external electric field, interacting with an electrostatic image carried on the imaging member.

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12. The method of claim 11, wherein  $R_C$  is between about  $2R_T$  and about  $5R_T$ .
13. The method of claim 11, wherein the carrier particles have a dielectric constant  $\epsilon_c$  greater than about 10.
14. The method of claim 13, wherein  $R_C$  is between about  $2R_T$  and about  $5R_T$ .
- 5 15. The method of claim 11, wherein the carrier particles have a dielectric constant  $\epsilon_c$  greater than about 100.
16. The method of claim 15, wherein  $R_C$  is between about  $2R_T$  to about  $5R_T$ .
17. The method of claim 11, wherein the carrier particles have a dielectric constant  $\epsilon_c$  greater than about 298.
- 10 18. The method of claim 17, wherein  $R_C$  is between about  $2R_T$  to about  $5R_T$ .
19. The method of claim 11, wherein the external electric field of image development is less than the electric field produced by a uniformly-charged toner particle of charge  $q$  and radius  $R_T$ .
- 15 20. The developer of claim 1, the carrier particles having a size distribution according to the Schulz distribution with  $z$  greater than about 6.
21. The developer of claim 1, the carrier particles having a size distribution according to the Schulz distribution with  $z$  greater than about 10.
22. The developer of claim 1, the carrier particles having a size distribution according to the Schulz distribution with  $z$  greater than about 50.
- 20 23. The developer of claim 1, the carrier particles having a size distribution according to the Schulz distribution with  $z$  greater than about 100.
24. The developer of claim 1, the toner particles having a size distribution according to the Schulz distribution with  $z$  greater than about 20.
- 25 25. The developer of claim 1, the toner particles having a size distribution according to the Schulz distribution with  $z$  greater than about 30.
26. The developer of claim 1, the toner particles having a size distribution according to the Schulz distribution with  $z$  greater than about 50.
27. The developer of claim 1, the toner particles having a size distribution according to the Schulz distribution with  $z$  greater than about 100.